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SCALE DEPOSITS FROM PALM OIL MILL EFFLUENT (POME) TREATMENT AND VARIOUS OTHER INDUSTRIES: A DEVELOPMENTAL REVIEW

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Abstract

The palm oil mill effluent (POME) treatment process is exposed to the formation of crystal-like deposits where their accumulation could create a significant threat to achieving an efficient POME treatment. This article reviewed similar occurrences in other industries, discussed factors influencing the crystal formation and suggested possible solutions to be applied in the oil palm industry. From the review, it was found that crystal deposits have always been a nuisance and sometimes a significant threat to similar industries such as industrial, agricultural and municipal wastewater treatment facilities. Other industries where there is a handling process of certain type of fluids such as heat transfer and oil reservoir drilling fluids also faces similar problems. The article also presented the spectrum of methods for mitigation and removal of the crystal formed. For many cases, nutrient recovery through struvite precipitation has become attractive as it not only reduces crystal growth but at the same time prevents excessive nutrients discharge to the environment. Further exploitation of the recovered struvite as a fertiliser source could possibly generate additional income to the oil palm industry.

Keywords

Author Keywords: [industrial wastewater](#); [palm oil mill effluent](#); [struvite precipitation](#); [crystallisation](#); [nutrient recovery](#)

KeyWords Plus: [SWINE WASTE-WATER](#); [MEMBRANE FOULING MITIGATION](#); [SOURCE-SEPARATED URINE](#); [ACTIVATED CARBON GAC](#); [STRUVITE PRECIPITATION](#); [PHOSPHORUS RECOVERY](#); [CRYSTAL-GROWTH](#); [PROCESS PARAMETERS](#); [NUTRIENT SOURCE](#); [REMOVAL](#)

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